



THE
ONTARIO WATER RESOURCES
COMMISSION

WATER POLLUTION SURVEY

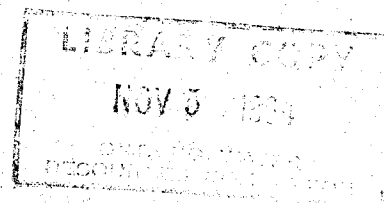
TOWN OF KINGSVILLE

COUNTY OF ESSEX

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Report on

WATER POLLUTION SURVEY

TOWN OF KINGSVILLE

County of Essex

September 1964

Division of Sanitary Engineering

A water pollution survey of the Town of Kingsville was made on August 11, and 12, 1964.

ACKNOWLEDGEMENTS

Mr.H. Cull, Mayor, Mr.D.M. Valentine, Clerk-Treasurer, supplied information pertinent to the survey. Mr.W. Schieve, Works Foreman, assisted in the investigation and sampling programme.

GENERAL

The population of Kingsville is listed as 3,459 (1964 Municipal Directory).

General drainage in the town is into Mill Creek and Lake Erie. The upper reaches of Mill Creek are in the Township of Gosfield South and to the north-east of Kingsville. The creek flows in a westerly direction through the northern section of town, turns south and flows through the western section of town, and discharges into Lake Erie. Mill Creek therefore provides drainage for almost all of Kingsville with the exception of a section east of Division Street South, and south of the Chesapeake and Ohio Railway. This section is drained by municipal drains which discharge directly into Lake Erie.

Septic tank systems are utilized generally for the treatment of domestic sanitary sewage. It is known however that many septic tank systems, particularly older installations, and those on the majority of downtown business properties, are not equipped with adequate field-tile disposal beds. This condition is possibly due to the lack of space for installation, or to the

lack of enforcement of septic tank regulations at the time of installation. The lack of adequate private sewage disposal units results in the discharge of inadequately treated domestic sewage into surface water drains, Mill Creek, and Lake Erie. It is also known that the municipality permits the discharge of untreated processing waste from several local industries into municipal storm water drains, such industries include a fishery, a canning factory, a laundry, a laundromat and a dairy.

The pollution survey as conducted at this time consisted of the locating of all known municipal surface water drains, and of a sampling programme on each to determine the degree of pollution present, and to assess the influence of such pollution on the receiving watercourse.

The sanitary chemical and bacteriological analyses of samples collected from surface water drains are listed in Table 1. The analyses of samples collected from Mill Creek are listed in Table 2. The location of sampling points are designated by mileage distances on the accompanying map.

INTERPRETATION OF LABORATORY ANALYSES

For convenience in the interpretation of laboratory analyses, the Ontario Water Resources Commission water quality objectives for effluents from any storm sewer or surface water drain are listed.

5-Day BOD (Biochemical Oxygen Demand)
- not greater than 15 ppm

Suspended Solids
- not greater than 15 ppm

Coliform Organisms (Membrane Filter Method)
- not greater than 2400 per ml

Similarly, the water quality objectives for any watercourse (e.g. Mill Creek) are as follows:

5-Day BOD (Biochemical Oxygen Demand)

- not greater than 4 ppm.

Coliform Organisms - (Membrane Filter)

- not greater than 2400 per ml

The presence of anionic detergents indicates pollution from domestic sources.

SIGNIFICANCE OF ANALYSES

By comparing the laboratory analyses of samples collected from the surface water drains with the objective figures for water quality, it is readily noted that all drains investigated are grossly polluted. This condition can be attributed directly to the aforementioned illegal practice of discharging inadequately treated domestic and industrial wastes into the drains. The excessively high coliform organism counts and the presence of anionic detergents indicate that inadequately treated domestic sewage and wastes are major sources of pollution.

Similarly a comparison of laboratory analyses of samples collected from Mill Creek with objectives for a non-polluted watercourse, clearly indicates the damage that is being caused in the stream. It is noted that the water quality of Mill Creek upstream from any built-up area is reasonably good (M 1.8), but as the flow progresses through the municipality the quality deteriorates.

It is probable that the municipal surface water drains along each side of Division Street north, and also the

Palmer drain, do contain pollution from sources outside of the Town of Kingsville. These drains provide drainage for sections of the Township of Gosfield South. The degree of pollution is indicated by the analyses of samples no. MP 1.9, MP 2.0, MR 1.71, and MP 1.72.

SUMMARY

A water pollution survey of surface water drains in the Town of Kingsville was made on August 11 and 12, 1964. The quality of water being discharged into Mill Creek and Lake Erie from twenty municipal surface water drains was investigated. Conditions of gross pollution as indicated by visual examinations, and confirmed by laboratory analyses of samples collected, were prevalent in all drains.

The sources of the pollution are in general the discharges of untreated sewage and wastes from inadequate private septic tank sewage systems, and from industrial operations.

The quality of water in the Mill Creek watercourse is reduced to a condition of gross pollution by the constant discharge of inadequately treated wastes through the surface water drains.

RECOMMENDATIONS

It is therefore recommended that in order to eliminate local unsanitary conditions, and as a measure of pollution control in adjacent watercourses that the municipality of Kingsville institute a sewerage works programme for the

installation of sanitary sewers and a system for sewage treatment.

All of which is respectfully submitted.

District Engineer



C.E. McIntyre, P. Eng.

Approved by



K.H. Sharpe, Director.

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Prepared by:

J.K. Ferris

TABLE ITOWN OF KINGSVILLE - WATER POLLUTION SURVEYSURFACE WATER DRAINS

<u>Mileage Points</u>	<u>Description of Sampling Points</u>	<u>5-Day BOD (ppm)</u>	<u>Total</u>	<u>Solids Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>Anionic Detergents as ABS (ppm)</u>	<u>Coliforms per 100 ML Membrane Filter</u>
M 0.19A	Outfall from Division St. south (post chlorination).	13.0	504	20	484	6.1	19,000,000
M 0.19B	Division St. south (pre-chlorination).	9.6	472	22	450	6.0	7,800,000
M 0.21	Queen St. drain at Harrington St.	12.0	488	22	466	3.6	1,070,000
M 0.7	Main St.W. drain (east of Hwy.#18A).	3.8	550	16	534	0.8	54,000
M 1.0	Drain from Pearl St.	40.0	568	34	534	3.7	64,000,000
M 1.1	Drain from Main St.W. (east of Hwy.#18A).	41.0	534	32	502	12.0	45,000,000
M 1.15B	Drain from Prince Albert St. south.	66.0	572	44	528	18.0	51,000,000
M 1.15A	Drain from Prince Albert St. north.	24.0	480	8	472	7.4	4,900,000
M 1.61	Outfall to Mill Creek from Division St. north drains.	50.0	696	52	644	9.9	13,300,000
M 1.62	Outfall from Division St. drain south of Mill Creek.	14.0	500	6	494	3.8	5,500,000

TABLE I CONT'D

<u>Mileage Points</u>	<u>Description of Sampling Points</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>Solids Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>Anionic Detergents as ABS (ppm)</u>	<u>Coliforms per 100 ML Membrane Filter</u>
M 1.7	Outfall to Mill Creek from Thorncrest Ave. drain.	55.0	668	48	620	5.6	70,000,000
MD 1.71	Drain from east side of Division St. north.	40.0	498	36	462	6.0	12,000,000
MR 1.71	Drain from west side of Division St. W.E.O.L.S. drain.	90.0	1,088	226	862	1.5	21,000,000
MB 1.71	Outfall of drain from Bachelor property.	160.0	1,056	536	520	11.0	23,000,000
MP 1.72	Outfall from Palmer drain.	2.0	582	1	581	0.8	3,500
MH 1.76	Outfall from Horwarth Ave. drain.	250.0	910	170	740	46.0	470,000,000
MM 1.8	Outfall from McCallum St.	100.0	892	72	820	10.0	49,000,000
MP 1.9	Palmer drain at Gosfield south boundary.	11.0	554	292	262	2.4	2,900,000
MP 2.0	Palmer drain at Jackson-Palmer property line.	16.0	310	54	246	2.0	540,000
P 1.	Park St. drain (at manhole on Park St.).	21.0	548	44	504	4.6	140,000

TABLE I CONT'D

<u>Mileage Points</u>	<u>Description of Sampling Points</u>	5-Day BOD (ppm)	Total (ppm)	Solids Susp. (ppm)	Diss. (ppm)	Anionic Detergents as ABS (ppm)	Coliforms per 100 ML <u>Membrane Filter</u>
J.W. 1.	Jasperson west drain (at manhole on Park St.).	3.1	414	9	405	0.2	115,000
J.E. 1.	Jasperson east drain outfall at Lake Erie.	6.0	600	35	565	0.2	210,000

TABLE 2

TOWN OF KINGSVILLE - WATER QUALITY SURVEY - MILL CREEK

<u>Mileage Points</u>	<u>Description of Sampling Points</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>Solids Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>Anionic Detergents as ABS (ppm)</u>	<u>Coliforms per 100 ML Membrane Filter</u>
M 0.0	Mill Creek at mouth.	9.8	574	46	528	0.8	250,000
M 0.2	At Queen St.	9.8	582	20	562	1.8	67,000
M 1.1	At Main St.	17.0	524	1	523	1.4	290,000
M 1.6	Downstream from Division St.	14.6	514	2	512	1.0	890,000
M 1.8	Upstream from the Town of Kingsville.	0.9	504	2	502	0.0	4,000